

What is claimed is:

1. A method for managing file transfer actions in a file transfer system comprising user terminals among which file transfer actions are performed and an apparatus for managing the file transfer actions among said user terminals, said method comprising the following steps which are performed by said apparatus:

accepting entry of a file to be made open or said file's attribute information that identifies one of the transfer actions of the file,

creating new attribute information for said file to be made open not including said attribute information and adding the new attribute information to said file,

updating said attribute information for said file to be made open including said attribute information, and

storing combination of the identifier of said file to be made open and the attribute information added to said file into a file transfer actions database,

wherein the new attribute information comprises a unique ID different from any previously issued unique ID and an arbitrary sub-ID, and

wherein the updated attribute information comprises a unique ID inherited from the attribute information from which the update derives, a sub-ID different from any previously issued sub-ID under the unique ID, and a parent sub-ID identical to the sub-ID from the attribute information from which the update derives.

2. The method for managing file transfer actions according to claim 1, wherein said storing step stores combination of the identifier of said file to be made open, the attribute information added to said file, and history information about the transfer actions of said file into the

file transfer actions database, said history information comprising at least one of the following: user ID to identify the user who requested the file transfer action, activity to indicate the type of the file transfer action, file name assigned to the file, time and date when the file transfer action was performed, contents information to describe the contents of the file, and file type to indicate the type of the file.

3. A method for visualizing file transfer actions, based on the file transfer actions managed by the method for managing file transfer actions as recited in claim 1, said method comprising the following steps which are performed by said apparatus for managing the file transfer actions:

- accepting entry of attribute information of said file,
- retrieving data corresponding to file transfer actions having a unique ID derived from said attribute information from said file transfer actions database,

- creating a flow model of a tree structure in which the tree is formed by connecting file transfer action data with a parent sub-ID to file transfer action data whose sub-ID matching the parent sub-ID, the root of the tree being data corresponding to the initial file load action, and

- presenting said flow model.

4. The method for visualizing file transfer actions according to claim 3, wherein said flow model presenting step presents a directed graph with nodes of sub-IDs from said file transfer actions data, a link between two nodes being represented by an arrow-line indicating the direction from the source to the destination of file transfer.

5. The method for visualizing file transfer actions according to claim 3, wherein said flow model presenting step presents a flow model as a time sequence list display in which file transfer actions are arranged in time sequence in which the actions were performed.

6. A method for visualizing file transfer actions, based on the file transfer actions managed by the method for managing file transfer actions as recited in claim 1, said method comprising the following steps which are performed by said user terminals:

- extracting attribute information relevant to a file,
- getting data corresponding to file transfer actions in time sequence from said attribute information,
- creating a flow model from the data, according to the sequence of said file transfer actions in time sequence, and
- presenting said flow model.

7. An apparatus for managing file transfer actions in a file transfer system comprising user terminals among which file transfer actions are performed and the apparatus for managing the file transfer actions among said user terminals, said apparatus comprising:

- a file transfer actions database to store information relevant to said file transfer actions, and

- an attribute information creating element which creates attribute information per file to be stored into said file transfer actions database,

- wherein said attribute information comprises a unique ID to identify said file, a sub-ID to identify one of transfer actions of said file, and a parent sub-ID to identify the preceding one of transfer actions of said file.

8. The apparatus for managing file transfer actions according to claim 7, further comprising a history information creating element which creates history information relevant to said file transfer actions,

wherein combination of said history information, the identifier of said file, and the attribute information added to said file is stored into said file transfer actions database, said history information comprising at least one of the following: user ID to identify the user who requested the file transfer action, activity to indicate the type of the file transfer action, file name assigned to the file, time and date when the file transfer action was performed, contents information to describe the contents of the file, and file type to indicate the type of the file.

9. The apparatus for managing file transfer actions according to claim 7 or 8, further comprising a user authentication element which authenticates users who perform said file transfer actions.

10. A user terminal in a file transfer system comprising user terminals among which file transfer actions are performed and an apparatus for managing the file transfer actions among said user terminals, said user terminal comprising:

an open file directory element to store open files,

an attribute information obtaining element through which the terminal gets attribute information attached to a file, and

an attribute information adding element which adds attribute information associated with a file to the file,

wherein said attribute information comprises a unique ID to identify said file, a sub-ID to identify one of transfer actions of said

file, and a parent sub-ID to identify the preceding one of transfer actions of said file.